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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,962

DATE: 01/24/2002 TIME: 18:46:52

Input Set: N:\Crf3\RULE60\09751962.raw
Output Set: N:\CRF3\01242002\1751962.raw

## SEQUENCE LISTING

```
(1) GENERAL INFORMATION:
             (i) APPLICANT: CATCHESIDE; DAVID E.
            (ii) TITLE OF INVENTION: REAGENTS AND METHODS FOR DIVERSIFICATION
      7
                                      OF DNA
      8
           (iii) NUMBER OF SEQUENCES: 2
     10
            (iv) CORRESPONDENCE ADDRESS:
     12
     13
                  (A) ADDRESSEE: Merchant, Gould, Smith, Edell, Welter & Schmidt
                  (B) STREET: 3100 Norwest Center, 90 South 7th Street
     14
                  (C) CITY: Minneapolis
     15
                  (D) STATE: MN
                                                     ENTERED
     16
                  (E) COUNTRY: USA
     17
                  (F) ZIP: 55402
     18
             (V) COMPUTER READABLE FORM:
     20
     21
                  (A) MEDIUM TYPE: Diskette
                  (B) COMPUTER: IBM Compatible
     22
     23
                  (C) OPERATING SYSTEM: DOS
                  (D) SOFTWARE: FastSEQ for Windows Version 2.0
     24
            (vi) CURRENT APPLICATION DATA:
     26
C--> 27
                  (A) APPLICATION NUMBER: US/09/751,962
                  (B) FILING DATE: 29-Dec-2000
C--> 28
     29
                  (C) CLASSIFICATION:
     31
           (vii) PRIOR APPLICATION DATA:
     32
                  (A) APPLICATION NUMBER: 08/977,171
     33
                  (B) FILING DATE:
     37
          (viii) ATTORNEY/AGENT INFORMATION:
     38
                  (A) NAME: Skoog, Mark T
     39
                  (B) REGISTRATION NUMBER: 40,178
                  (C) REFERENCE/DOCKET NUMBER: 10552.13US01
     40
            (ix) TELECOMMUNICATION INFORMATION:
     42
     43
                  (A) TELEPHONE: 612-332-5300
     44
                  (B) TELEFAX: 612-332-9081
                  (C) TELEX:
     45
     49 (2) INFORMATION FOR SEQ ID NO: 1:
     51
             (i) SEQUENCE CHARACTERISTICS:
     52
                  (A) LENGTH: 9775 base pairs
     53
                  (B) TYPE: nucleic acid
     54
                  (C) STRANDEDNESS: single
     55
                  (D) TOPOLOGY: linear
     57
            (ii) MOLECULE TYPE: Genomic DNA
     59
            (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
                                                                                 60
         GATCGCAACT GGAGATCACT CGCACCGTGC CGCAGAACAA GGGCGACGAG CCTCAGGGCA
     61
                                                                                120
         GTTTAGCCTG CCGTAACAGC ACAGACCATA GCTTATTTTC ACCTGGGCGG GCGGGCGACG
```

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63	GCGGCACTGA	CATCGGCAAG	GCGGCATCAA	GCAACCCCTC	TGTTGCTTGC	CAGCTGCCGG	180
64	CCAACGTCAG	CGGTACAAGG	AGAAATCTGG	AAGGAAAGAC	TTCTGGCACC	GACAGGATGG	240
65	CACGCGGGAA	AAGTTCCCAA	TGCATGAGAT	GAGGGGCATT	TGCATTGCCT	CCCGTCACAC	300
66	TGCCCGCGAA	CCCCAACCCC	ACCATAGCGT	CTGTCGATAC	ATGGAGCGCG	AAGTCGAGAA	360
67	ACCTGTAATT	CCTGGTAACT	TTCAGGTACA	CAGTACGTAC	TGATCCTGGT	ATCAAACCTT	420
68	GCCTGCCGAG	TTTTCGACGG	AAAGAGGTGT	GAATTGTGAA	AGAGTCATAC	CAAATCACCC	480
69	GATTTTCATA	AAGCCCGAGT	CTTTTCTGTA	CATAAGCGAC	ACTCGAAGCG	GGCCTCATCT	540
70	TCATAGCCTG	ATAGCTTGTA	ATACTCCATC	CTCGTATCTC	ACTTGACCTT	GAGTTCAACC	600
71	CCACGTCAGA	CTTCACCCGA	CACATCGACG	GATTGGGGAA	CAGCACAATA	CCTGAAAAGC	660
72				AGACAACACT			720
73	GTGTCAGTGT	TCCTCCCGGA	CTGAATGACA	TCAAGGAGGG	CCTCAGCCGG	GAGGAAGTCT	780
74				AGCCCAAGAC			840
75	TCCTCAAGCG	TCACAATGTC	GAATTTGAGC	CCTACTTCGA	TGTAACAGCC	CTCGAGTCTA	900
76				GCGCCCGCAA			960
77				GCGTTGCCCC			1020
78				GCCTTTTGCT			1080
79				CCAGAGACAA			1140
80				AGTTCATCCA			1200
81				CAACAAAGAA			1260
82				AGTCTGACCG			1320
83				TGGGTCTGGT			1380
84				TCTATCAGAG			1440
85				AGCTCGTCCG			1500
86				AGGGTCGTTT			1560
87				AGCTCGAGCA			1620
88				GTCTCTTCTC			1680
89				GCACCGCTCA			1740
90				TTACCAGGGC			1800
91			-	AGAGCTGGAA			1860
92				GCATCAAGCC			1920
93				CCCAGGAGAC			1980
.94				CCGAGGAGCT			2040
95				AGATCATTGT			2100
96				ACACTCACAA			2160
97				CCAAGGAGCT			2220
98				ACATCCGCAA			2280
99				CCGGTGTTGT			2340
100						AGCACTGCCC	2400
101						GCCTCTCCTC	2460
102						GTTGGGGCCG	2520
102						GGCACCGAGA	2580
103						GCTGCCAAGA	2640
104						GCCCGTCCG	2700
105						GATCTCCTGT	2760
107						CTCGACGAGG	2820
108						CTCGCGTCC	2880
109						GTCGAGGAGG	2940
110						AAGGAGGCCG	3000
111						TGGACTCCTG	3060
***	TOTALOGUE	. COMICIIGIC			2111100000		5500

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112	AGTCCGTTGG	CGATTACTCT	GCTGGTGTTA	ACCACTCGCT	GCGTAAGTTA	CATATCATAA	3120
113	ATAGCCCCGC	TTCACAGATT	CTTCTGCTAA	CGTCAAGACA	CATAGCTACC	TATGGTTTTG	3180
114	GCAAGCAGTA	CTCTGGCGTC	AATCTCGCCT	CGTTCGTCAA	GCACATTACC	AGCTCCAACT	3240
115	TGACTGCCGA	GGGTCTCAAA	AACGTCGGCC	AGGCTGTCAT	GCAGTTGGCT	AAGGTTGAGG	3300
116	AGCTCGAGGC	TCACAGAAGG	GCGGTCAGCA	TCCGTCTTGA	GCACATGAGC	AAGAGCAACT	3360
117	AGACGGAAAT	TCTTTTTCGA	AGTTGCAAAA	AAAACAAGAA	CAAAAGGATG	TAGTGGGTTG	3420
118	ATGTATATCT	GGGTCATTTT	GGGCACATAG	AGTAATGATA	ACGAGTTTTG	GACATTGTAC	3480
119	TGTTCTGTAC	AGGCTGAAGA	TCAGTACATG	AATCTGTTGG	TAAGTGTAGA	GACCCAAACG	3540
120	TCCCTTGAGT	TTTTCTCCCT	GTTCCAGAGA	GGTGCTCGTC	CCTGGGTGTT	TATTTTCATT	3600
121	ATTACATCAA	CCTTTTATTT	TATTTTATTT	TTTATTTTAC	TTTTTTTCC	TTTTTTTCAG	3660
122	ATCATGCGTA	CATGAACGGG	GGAAGCACAG	ACGATCGAAA	CGTGGATGTC	ACAATGTCGC	3720
123	TGCAGTGATG	CTGCATTGCA	TGAAGCGCCC	ATCTCAATAT	ACTTGCAGTC	TTGCGCGTTG	3780
124	CACGTGAACT	TCCCAAACAA	CCGAATAAAA	GACGGCGAAA	AATGAAGATA	AAAAAAAACC	3840
125	ATAATAAAA	TCGGAGGGAG	TGTGGGAAAT	GGTTTCTTTT	AGCATTTAGA	CCCCATAGCC	3900
126	GTGCACGCCC	GGGTACAGAC	AGGTTCATCG	ATGTTGACAT	TGACTGGGAC	ACCAGGTCTA	3960
127	TCTATTTCAT	CTCCTGTCCT	CTACCATACA	TCGGGACATC	GGACATCTCG	CTGTACCCCC	4020
128	CACACCCACA	AAGTCTTATA	AAAGCGCCAC	ACCCGAGGAG	GTTCGGTCGG	CCCCACGAAC	4080
129	TCCGTGCCTC	CCTGCCTGTT	TACAGGGACC	GAACGCTGGA	GAAGCTTAGT	TTCCTGACAT	4140
130	CCGGCCTACC	CGAGCAGGAA	AAGGGACAGC	TCATAGGCGA	GGAGGGATTT	GAAGATGGGG	4200
131	ACATTTTGGA	TGATTCGAGA	GGAGGAACTA	GGTACTGTAT	CATGATAGTT	CGGGGCAGCA	4260
132	TCTTGGCTGG	GACATTGTTA	ATACCTCGAT	ATGATGAAGT	GGGAGGGAGT	TTTTTCATGT	4320
133	CTTGCCCAAG	TCCCACTAAT	CTTTTTTTTT	TTTTGTACCA	ACACCCAAGA	TTCGGAGAAT	4380
134	AGTGTAAGGA	TTCGCATTCA	CAAGTGGAAG	TCTGAGGATC	TTTTTATATC	TTTGTCTTCC	4440
135	GCGGACTGTT	AACGATCCTA	CAGCGAGCGA	GCGAGCGGTC	GGATGCGCTG	ATCTGATAGG	4500
136	TGCAATATAC	GGCCGCTTTC	TCCGGTCGTG	TAGTGTAAGC	TCTGTCGGCA	TAGTAGTACA	4560
137	CTAAAAAAAAC	CCTTGCATTT	CATGATCTGC	TTGCTATTCA	TTCCGAGTTA	TTTCAGTGGT	4620
138	CACATTTCGA	GATTCACAGC	CATCCATCCA	TATGGAAAAA	TCCATTCCCA	TGCTTCCTCC	4680
139	CCCCCACTAT	GTATGTGACC	ACACGCTGCT	GTCAGAATGC	CAACGGTCTC	AGGTACCCTC	4740
140	GTCCGACTGT	TTGGCATGGA	GTTACATACA	CTACTAGTGT	AGCCCCGGGC	CAAGCTACCC	4800
141	CGTCAAATCT	ATACATATCT	ATAATGGGTT	TCAGGTGTTT	CGTTCGCTGT	CAATCAAGTT	486,0
142				ATTAGACCAT			4920
143	TGGGCGGTTG	GGTCGGCAAT	AACGGGACTG	GACTTGAGAG	GGACGAGGAG	AGTCGGTTGG	4980
144	CTGCCTACAC	TACACTACAA	GCGTTCCCAC	CTAACCGACG	AGTCCCGTTT	TCCATTTGTG	5040
145	TGCCTTAACC	ATCATCTAGG	GATGTCAGGG	TTTGGCCGGA	TCAGGGTATG	TTTGGTTGAC	5100
146				GGTAGGTGTC			5160
147				ATGAGTTGTA			5220
148						CGAGGTCCTG	5280
149						CCTTTGCGTT	5340
150	GAAATACAAA	AAGTCAAGAA	TAAAATCGCT	TGAGGATAGG	GACGTGGAAG	CAAGCAAATA	5400
151				CAGCAAACTG			5460
152				AGCCTTGGTA			5520
153				GGGAGGATCT			5580
154				TGTTAGGCTT			5640
155				TAGACTTACT			5700
156				GACTTTGCTT			5760
157				GGCTCTTTTT			5820
158				CAAGGTAGGT			5880
159				GTCATGATGA			5940
160	TGGTTACGGG	GAGCTGGGAC	CGCTAGGCCT	CAGTGGTTGT	GCCATTCAGC	GTGGGTGTGT	6000

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161			TGGAAGTTGT				6060
162			GCCCATGTGC				6120
163			CTTCCCGGTG				6180
164			GGGGCACCGT				6240
165			TGCAATCCCC				6300
166			ATCCGCATTG				6360
167			CAACACTTCC				6420
168	TCTCTTTTTT	TCTTGGGCGA	CCGACTTTTT	ATATCCGTCC	TTGCTTCCCC	CTGGCCGTTG	6480
169	TCGTTCTTTC				CTTGGTTCGG		6540
170			TCTTCCAGGT				6600
171			TGATGTTTAT				6660
172			AGTCCCTACG				6720
173			TTATCAATTA				6780
174			TCGGCCGAAC				6840
175			ACTTGCCGTT				6900
176			CTGTCCCAAG				6960
177			CTGGTTGTCG				7020
178	AGGGACCTAC	TGAAGAGGC	CAACATCACT	GGGTTCGATT	CCGAAACTTT	CATGAATGAG	7080
179			ACTGCCCAAT				7140
180	CGTGCCCTCA	TGAACGGCGC	CGGCTTCGTT	GCTGCTGCGG	ATAACCGGAT	TCAAAATACC	7200
181	ACGGGCGCAG	GTGGTATTGG	AGGCTTGTTG	CAGTCCAGCA	CATATTTGTA	TGTAAAACCA	7260
182			TATCTCGTTT				7320
183	GGCGGCTGTG	GACGACCTTG	CTGGTGAACA	TGTCTTGGAC	TCCATGCCCC	TTTTTTCGTT	7380
184			AAAAAAAAA				7440
185	GACCGTGACT	GTAAATTGCT	AACGCAACTC	TAGGGCCGGA	CTTTCTGGTG	GTGGCTGGCT	7500
186			ACAACTTCAG				7560
187	AGTCTGGGAC	TTTGAGAACT	CCATCTTTAA	AGGACCCAAG	GAGGCTGGCC	TTAGTACTGT	7620
188			CCGAAGTGGC				7680
189			ACTACTGGGG				7740
190			ACACCTTCTC				7800
191			TTCTGGTAGC				7860
192			ACGAGTTCAA				7920
193			CCAAGTACCT				7980
194			AGGGTCTCGA				8040
195			TTTTGGCCAA				8100
196			TCTGTCCTCA				8160
197	CCAAATCATC	CCTAATCCGT	TCCTGGACTG	GAACAACCGG	ACCAACCCCA	ACGCCGACAC	8220
198			ACGGCGGCGA				8280
199			TCGACGTCAT				8340
200			CCCTGCGCGC				8400
201			CGATCCCCGA				8460
202			GCTGCGATGT				8520
203			ATGTCCCCAA				8580
204			CGATGTCTCA				8640
205			GCACGCTGGA				8700
206			ATCGGTTGGG				8760
207	CTTTGACAGG	TATTGCTGGA	ATGGCACAGT	GAACTCCAAA	GATACGGGGG	TTTACATGCC	8820
208			CGCATGCCCT				8880
209	GGTGAATGTC	TGGTCGTCGG	TTGTGGTGGG	AGTTGTGGCG	GCTACTTTGT	TGTTGTAGGG	8940

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210	GTAGGGGAGA	CGTGATGATA	TTCCAGTCTG	ATGAAGTTGA	GACTGGACTG	GAGATCGCCA	9000
211	AGGATGCGGA	GGGAAAGGAA	TGCGTGGTGT	TAATGTCATG	ATGGATGAAG	AGTCATGGAT	9060
212	CATGGAACGA	CGGGGCGGG	ATATTGGATG	ATGGATATAC	CACACTGCAT	GCATGCTCTA	9120
213					CTCCATCCTG		9180
214					${\tt CTTGAGGTTG}$		9240
215					ATCGAAGTAT		9300
216					ACGGTCGGAT		9360
217					TGCCCACACC		9420
218					CCTTTCCATC		9480
219					TTCTCCTTTG		9540
220					TCACTCAAAC		9600
221					TTCTTACGAC		9660
222					GATCTGTTTA		9720
223					AAAAAAAAA		9775
	(2) INFORMAT						
	(i) SE(			•		•	
229			9934 base pa			:	
230	•	3) TYPE: nuc	_			•	
231	•	•	NESS: single	3			
232		O) TOPOLOGY		-			
234			: Genomic Di	J۵			
236			RIPTION: SE				
238	ACCCCCAATC	GTAGCGGGCG	CTAAGGCCAA	GCCGCGGCAC	GGGTCACTGA	CCCAATGCAG	60
239	CCCATTCCCT	CAGCAACTGA	AGTGGATGTA	CAAGTACATA	GTAGTAGATC	GCAACTGGAG	120
240					AGGGCAGTTT		180
241					GCGACGCCGG		240
242					TGCCGGCCAA		300
242					GGATGGCACG		360
243					TCACCCAGTG		420
245					AGAAACCTGT		480
245					CCTTGCCTGC		540
247					ACCCGATTTT		600
247					ATCTTCATAG		660
249					AACCCCACGT		720
250					AAGCGAGAAA		780
251					GTCGGTGTCA		840
252					GTCTCGTGTC		900
253						AGCGTCACAA	960
254					TCTATCGATG		1020
255	TGTCGAATTI	CCCCCCCCCCC	CCAACCTCTT	TCTCAACACC	GAGCAGTTGG	CCGACCTCTC	1080
	CCCAMAMCCC	mccccccemec	CCCCCATTCT	CACTEGAACE	AGCGCTGCTT	TGCTTTCCTC	1140
256					ACTGCCTCCG		1200
257	CUCCACCGAG	CACCCCACAC	1GC1C1CCGG	TACCCCCTTC	TTCATCAAGC	CCGTTCCTGG	1260
258	GITICIGGAG	CAACACMMCA	TCCACCTCCC	CCCCAACCCTTC	AACGCCATCC	CCATCCTGCC	1320
259					CTTGCCATCT		1380
260					CCCACCGTTG		1440
261					AGTGTGAACG		1500
262	GUACGACACT	CCTCTGGGTC	1GG1CTACAG	CAGIGCCGAG	TGGTACAAGG	CACCATCAG	1560
263	GACACAGACT	CACCACCTICC	TO COCO TO TO TO	CCTTCACTCC	GATAACGATG	CTGCTACTTC	1620
264	CGGAGACACT	CAGGAGCTCG	TCCGCATCTC	GCTIGHCIGC	GAINACGAIG	CICICAAGII	1020

VERIFICATION SUMMARY

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L:27 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:28 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:] L:411 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2